



THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

For every Evil under the sun
There is a remedy or there is none.
If there is one, try and find it;
If there is none—well, never mind it.

The Trial of Mr. Z. A. Clark, of Arkansas, Ark., is to come off about July 16, and the National Bee-Keepers' Union has engaged considerable legal talent, and we go to the trial in full confidence of gaining a substantial victory.

Mr. Jonathan Periam is again at the helm of the *Prairie Farmer*, for the past 3 or 4 years held by Orange Judd. The AMERICAN BEE JOURNAL extends a welcome, and wishes Mr. Periam and the *Farmer* abundant success.

Crates or surplus cases for holding the section-boxes should be made neat in form, so that they may be used as shipping-crates or retailing crates. Sections of honey well completed and nicely arranged in such crates will bear very rough handling, and will remain well preserved if the sections have not been removed after taken off.—*Ex.*

The Season is about a month late this year, and consequently everything seems "out of time." Still the prospects for a honey crop in some localities is considered to be excellent. Just as we go to press, the following expression comes in from Mr. M. O. Tuttle, of Osage, Iowa, showing that there, at least, the apiarists are buoyant and hopeful. He says:

The prospects are very encouraging here for a good honey flow. Last week I doubled up my colonies in order to lessen the number, and to get them exceedingly strong early in the season. Our season is 3 or 4 weeks late.

Tiering Up.—Concerning its advantages and the methods to be employed, Mr. W. J. Cullinan, of Kansas City, Mo., writes this in the *Farmer's Review*:

Tiering up.—Now we come to one of the nicest things connected with modern apiculture. By this plan we are enabled to secure 4 pounds of honey where 1 pound was obtained by the old method. The plan is briefly this: When the first case of sections is one-half or two-thirds filled, lift up and slip under it a case of empty sections; now watch close, and when the upper one is nearly completed, which can be ascertained by blowing a little smoke on the bees, and then looking down between the sections, lift up these two and slip another empty case beneath.

By the time the bees need more room, should the honey-flow continue abundant, the top case will be completed, and should be taken from the hive, when the others may be lifted and another case placed below. Be careful not to add too many at the close of the season, as you will get too many unfinished sections, and be sure to remove as fast as completed, that your honey may retain its snowy whiteness.

When removed store in a warm place and sulphur occasionally to kill any moth-worms that may hatch out upon the combs. The reason for raising the first case and placing the empty ones below, is that by this plan a vacant space is left between the brood and stores which the bees will take possession of more readily, and work all the harder to fill it up.

Another advantage is, that the finished sections being on top they are not so liable to be stained or soiled by the travel of the bees, and are more easily removed when finished. Those running for extracted honey can tier up in a similar manner, but the advantages are not so great as in the production of comb honey.

After-Swarms are prevented (says Mrs. L. Harrison, in the *Prairie Farmer*), in this way: "When they hive a swarm, they place it where the parent colony stood, having removed it to one side, and facing differently. All of the bees flying in the fields, will, as they return, enter and remain with the new colony. After a few days, commence gradually to turn the old colony around, until about the time of the young queens, when the entrances will be side and side. Then remove the old colony to a new stand, and all the bees old enough to work in the fields will remain with the new one, making a very strong working force. When the first queen comes out of the cell, she will destroy all the others, and swarming will be prevented. By thus massing all the working force together in one hive during a flow, much more surplus will be secured, then if divided into several hives."

From New Zealand comes this paragraph in our Australasian contemporary for May, which shows how the AMERICAN BEE JOURNAL is valued in the Southern Hemisphere:

I must compliment Mr. Newman, the editor of the AMERICAN BEE JOURNAL, on the improved appearance of the new volume of that periodical, the first numbers of which have just reached me. It is printed on good paper, its articles are well written, and it decidedly ranks as one of the first bee-papers in the world.

Carbolized Sheet.—A correspondent in the *British Bee Journal* says: "The recipe given by Rev. G. Raynor for quieting bees in preference to smoke is:

1½ oz. Calvert's No. 5 carbolic acid.
1½ oz. of glycerine.
1 quart of warm water.

The acid and glycerine to be well mixed before adding the water, and the bottle to be well shaken before using. A piece of calico, or preferably cheese-cloth, sufficiently large to cover the top of the hive should be steeped in this solution, wrung dry, and spread over the hive on the removal of the quilt, when every bee will quickly disappear below, and manipulation may be slowly and quietly performed without annoyance from the bees. The same plan is effectual in driving the bees out of section-cases. From unsealed sections they often refuse to budge, but a little blowing through the strainer will always dislodge them. All of our sections are thus removed, and we have never experienced the slightest scent or flavor of the carbolic acid attaching to the comb or honey. This unpleasant result occurs only to bunglers, who either use too strong a solution, or do not wring out the carbolized sheet sufficiently dry, and so besprinkle the comb honey with the solution, and charge the evil result of their own stupidity on those who recommend the process. The strength of the solution quickly passes away, as the acid evaporates when exposed to the air.

Bees Take Possession of a House.—It frequently occurs in southern California that a swarm of bees take possession of a house, and fill the space between the lathing and rustic with honey, resisting all mild attempts to drive them out. The following is from the Tustin City correspondent of the *Santa Ana Blade*:

Sam Tustin has been having a war with bees. A half-dozen swarms had taken possession of his store building, occupied by J. W. Ballard, and threatened to hold it to the exclusion of its owners. And as the bees were very enthusiastic in their business, it looked as though they might stay, even though Sam had the first claim. Tustin, with an able assistant, first clothed themselves in complete armor of mosquito-cloth and heavy gloves, and, armed with an assortment of carpenter tools to tear off the rustic, etc., then, by the liberal use of brimstone and fire, made it warm for the pests. About two days finished one "houseful," and the boys had so much fight left in them, or wanted revenge, that they attacked a large colony in possession of the Presbyterian church, won the fight, and confiscated several barrels of honey.

The Nights have been so cool until last week, in this latitude, that work in the hives has been out of the question. As the season will be short, strong colonies will, in all probability, be the only ones to get much surplus, and but few are strong.

The Cincinnati Centennial Exposition opens on July 4, and closes Oct. 27, giving 100 exhibiting days. There will be reduced rates on all railroads. As to what the honey exhibits will be we are as yet uninformed. We hope it will be creditable to the pursuit. Of course our friend C. F. Muth will see that it is made such, for he never does things by halves.

GLEAMS OF NEWS.

Father Langstroth.—It has been known for some time that the bee-keepers of America have been trying to provide him an annuity to help him to a subsistence in his old age and many infirmities.

Our brethren in Great Britain have taken hold of the subject, and here is what the *British Bee Journal* has to say about our aged friend :

There is, perhaps, no man living to whom the bee-keepers of the present day owe more than to the Rev. L. L. Langstroth, or, as he is termed by our American friends, "Father Langstroth." How often in the progress and development of a science or industry the pioneers (those who were amongst the first and who worked the hardest), very soon become forgotten. It is so in bee-keeping; those who have done the most, and by their exertions have enabled many in the present day to become not only bee-keepers, but successful honey-producers, are forgotten and ignored. But this is not all, for those who have benefited by others' brain efforts and experiences are frequently those who do their best to crush them. Do we not find repeatedly that claims are made to inventions and improvements without regard to what has been done before? Names of inventors, discoverers, and benefactors are frequently forgotten in the eagerness to benefit at their expense.

We might mention numbers of instances at the present day, where inventions are used with but slight alteration, and the users deriving a pecuniary benefit, whilst the originators, to whom the invention cost a large expenditure of brain power, many sleepless nights, and perhaps a large sum of money into the bargain, are completely ignored. We have a most striking instance of this in the case of the Rev. L. L. Langstroth. We do not wish to enter into the question of whether Langstroth, Munn, or any one else, was the first to invent the frame, but what we wish to point out is that Langstroth was the first to make the movable-comb hive a practical success, and by his work, "The Hive and Honey-Bee," which is still the standard on the subject, he opened up to the world the improved methods of bee-culture, which have led to the enormous success witnessed at the present time. Does every bee-keeper realize that in using a movable-comb hive he is morally indebted to Mr. Langstroth for the benefit he is deriving from it? And if he does, is he prepared to make some acknowledgment and return for this obligation?

For many years Mr. Langstroth, who is now 77 years of age, has suffered, and only from time to time, and at long intervals, has he been able to take up with his favorite pursuit. We regretted that when we visited America last summer he was not in a condition to see us, and nothing would have given us greater pleasure than to have grasped this veteran's hand and looked into his benevolent face. Ever devoted to the science he loves so well, according to a friendly letter we received from him a few days ago, he was even then, during a period of convalescence, at the apairy of Mr. Heddron, studying the capabilities of the Heddron system. His head troubles have prevented him from earning his living, and it is because this master of bee-keepers has been robbed of his means of livelihood by some of those who have reaped the benefit of his labors, that he is not now, in his old age, in comfortable and independent circumstances.

From time to time small sums have been subscribed, and in 1879 "The Langstroth Fund" was started in America. In that

year Mr. Newman visited England, and at a meeting of the British and Foreign bee-keepers, held at our residence in Horsham, a subscription was started, which amounted to about £1, 6s., the whole amount collected here and in America barely reaching 40L. Since that time small sums have been remitted to him, but how out of all proportion is this to the benefits conferred by him on the world! It is now proposed in America to raise a sum of money in order to purchase an annuity, and every bee-keeper there will have an opportunity to pay some tribute to his great leader.

But why should we stand aloof and do nothing? On another page our correspondent, "Amateur Expert," in his pathetic appeal, says, "Let us, as British bee-keepers give practical expression of brotherly feeling by subscribing to the fund; it will only stimulate his countrymen to do more, and make the annuity the greater." These sentiments we heartily approve, and think it the duty of the many who have benefited by Mr. Langstroth's labors to do something on his behalf, so that this good old man may pass the remainder of his days in comfort, cherished by the thought that there are noble and honest minds on either side of the Atlantic that do appreciate his efforts, and prove a brotherly love and feeling are ready to recognize them. We shall be pleased to open a subscription list to be called the "Langstroth Fund," and earnestly hope that our appeal will be heartily responded to. Let us bear in mind that "he giveth twice who gives in a trice."

Donations sent to us, or to Mr. Huckle, Kings' Langley, Herts, will be acknowledged in the *British Bee Journal*, and forwarded to America. The list of contributions is headed :

	£ s. d.
T. W. Cowan.....	5 0 0
Geo. Neighbour & Sons.....	3 10 0
Rev. Geo. Raynor.....	1 1 0
W. Raitt, Blairgowrie.....	1 0 0
"Amateur Expert".....	0 10 0
Geo. Henderson.....	0 10 0

"Amateur Expert" refers to the matter in these words, which find a ready response in all true American hearts :

Dear Editor, you have given us in last week's *Journal* the long letter in defense of the poor drone, from the pen of the one whom "all the States own." Blood is thicker than water, and the whole Anglo-Saxon race is one people, moreover, "one touch of Nature makes the whole world kin." The dear old man has been afflicted, and with the saddest of all sorrows—head trouble. He is so far restored as to be able to write what you gave us last week, but as an actual fact he is past work in the way of bread-winning.

He has been defrauded of the results of his brains by his fellow bee-brethren, from lack of power to defend his rights, and being worn out and in poverty they have decided to buy him a small annuity. Surely we can endorse the sublime words of C. Mackay :

"I love you, if your thoughts are pure;
What signifies your poverty,
If you can struggle and endure?
'Tis not the birds that make the spring—
'Tis not the crown that makes the king.
If you are wise, and good, and just,
You've riches better than all other!
Give me your hand—you shall—you must—
I love you as a brother!"

Let us, as British bee-keepers, give practical expression of brotherly feeling by subscribing to the fund; it will only stimulate his countrymen to do more, and make the annuity the greater. What if the Maloneys, "Amateur Experts," and Heddons do occasionally have a "rough and tumble," let us show we are one mother's children by giving our mite. Here are two dollars to start, from—AMATEUR EXPERT.

Mr. A. I. Root, in relation to the unfounded statements put forth, that combs could be manufactured, filled with spurious honey, and capped over artificially, a statement that no intelligent man believes, writes thus to the *Farm, Field and Stockman*:

. It may be well to mention that the principal ground or foundation for the slanderous stories mentioned on the other side, is the fact that bee-keepers have, for perhaps ten years past, used extensively for the production of comb honey, what is called "comb foundation." It is made of thin sheets of genuine beeswax, embossed with the imprint of the bottom of the cells of the honey comb. This is made by passing wax sheets between embossed rollers, and lays out the work for the bees, and at the same time furnishes the wax to contain the honey. Each honey-box (or section) contains in its center, when placed on the hive, a sheet of this embossed wax; and if these boxes are placed in the hive when honey is to be had in the fields, the bees grasp hold of the shallow walls of the cells and draw them up into honey-comb in the same way that a potter pulls up a ball of clay into a crock or jug. Nothing, however, will answer for this comb foundation but pure beeswax; and the comb built from this wax is filled with honey brought in from the fields, exactly as if the bee had to secrete all the wax from its body, as in old time, before bee-culture had made the great strides it has now, and before it became a great industry, as it is now, comparing favorably with the production of butter, cheese, eggs and milk. Visit any progressive bee-man in your vicinity, and he will post you about this matter.

Breeding for Business.—The following item is from the *City and Country*, and was written by Mr. A. H. Duff. It commends itself to the judgment of all thinking apiarists. More attention should be paid to the matter of selecting the best colonies to breed from. He says :

Does it occur to bee-keepers that they should select their breeding stock? I am well aware that quite a number of them do, but I am afraid there are many that do not. Should we not give bees the same attention in breeding that we do any other kind of stock? If not, why not. It is just as important in breeding bees as it is any stock, to select and infuse new blood, etc.

There is scarcely any one that has given bees attention at all, but knows that some particular colonies far outstrip others in gathering honey, breeding, or in some other point. Some colonies are more inclined to swarm than others; others are good comb-builders, and still others are better at filling for the extractor. Some colonies consume one-half less honey during the winter than others, and come out in better condition in the spring, others will breed up more rapidly, and far outstrip their superiors in early spring, while other colonies are inclined to rob, and are more bother than they are worth.

All dispositions and colors may be attained by breeding. The whole make-up of the colony, in whatever particular, is altogether in the queen. It appears that whatever point is the specialty in that colony, the whole colony inherits the same thing.

By breeding from the best honey-gatherers we produce a strain of bees that swell our honey crops largely, and to combine the best honey gathering qualities with the non-swarming strain, we still add to our crop, and when we combine those two good qualities with gentleness, we have much satisfaction in gathering the crops. Hence, to secure the coming bee it is necessary for a combination of the several good qualities, and there is no doubt that a much higher state of excellence will be obtained.

First Swarms for the season have a peculiar interest, and Mrs. L. Harrison gives the following to the *Prairie Farmer* as her experience with her first swarm for this season :

Bees have a very poor reputation for observing the 4th commandment, and I suppose we notice more when they swarm on the day of rest. On Sunday, June 3, our first swarm for this year issued. I saw them in the air, and finally they scattered all over the leaves of a green ash; they did not cluster, thought better of it and returned to their hive.

This morning about half-past eight a neighbor called to me saying, "Your bees are swarming." There is nothing which so arouses my enthusiasm as to hear their tocsin note. It is like the sound of the bugle to an old war-horse, or the bag-pipe to a Scotch highlander.

On going into the apiary, I found that it was the same one that was on the wing Sunday, and I went up to the entrance to watch for the queen, hoping to catch her, but failed to see her. I inferred that she might be unable to fly, from some cause. As soon as the bees were out, I moved the old hive and put one filled with frames of comb in its place, so if they returned they would give up swarming, and if the queen was in the grass she would crawl back. They did not cluster, but came pouring back pell-mell in their hurry, like children running from room to room calling, "Where is mamma?" It is a pity that this bee had not been called mother instead of queen.—["Mother" is the correct name.—ED.]

This swarm had hardly returned to their hive when another came pouring forth from its hive, as if driven out by some unseen power, and in lieu of clustering, came to the first one. Why they came there I could not imagine, as there were very few of the first ones in the air to attract them. I covered up the first swarm with my apron, to keep the others out; and finally carried them to a new stand.

I soon noticed however, that they were not satisfied, running around and touching the antennae of their fellows, enquiring for mamma. Here was a pretty kettle of fish; a swarm entering a hive placed upon the former stand of the first swarm, while it was deserting its hive and returning. In despair I went to the house to write this paper, telling them to arrange matters to suit themselves.

After awhile I laid down my pen to go and see how matters were progressing. I found one queen bailed, and while trying to rescue her she was stung to death. To be certain of a queen in this hive, I now opened the old colony which formerly stood there, and took out a frame upon which was a sealed queen-cell, and put it into the hive. If they have a queen it will do no harm, and if they have not, they will soon have one.

The first swarms that issue are the best bees; that is, they have a prolific queen—if they did not, they would not be ready so soon. If they are nice, bright bees, I like to save as many of the queen-cells as possible, for queens reared under the swarming impulse are thought to be the best. Acting on this principle this morning, I opened the hive that had swarmed, and found a number of large, well-built cells. I took out a frame that had a nice cell, and capped brood, and covered with bees, and put it into a hive with another frame of honey, and put in a division-board. As the bees have no queen, they will remain: the queen will be out in a few days, and become fertilized.

Where frames of brood and bees are removed from a hive having a fertile queen, so many bees will return that there will not be enough left to perform the work for the brood. Therefore it is a much better way to divide up a colony that has swarmed, and has choice queen-cells, as I have done.

If there are a dozen choice cells in a hive, and the bees decide not to swarm, the cells are all destroyed. And there is no way to preserve them, and have the young queen fertilized, but to have one in a hive. The cells can be preserved by being cut off and put into queen-nurseries, but they must be with a colony of bees, either large or small, or they will not become fertilized.

In the same article he says: "And the food from the cell from which the larvae were removed, can be given to larvae not yet sealed." How should sealed larvae be removed? 5. Is it necessary to remove it when pollen is plenty? 6. For a nucleus to keep queens over winter, how many frames of bees are needed, and how large should the frames be; should there be empty frames put in with each queen's brood-chamber (or apartment)?

1. Yes; it is better to paint them of different colors, because it will aid the queens to find their proper hives when returning from their wedding excursions.

2. Red, white and blue alternated present a good appearance.

3. Virgin queens should not have their wings clipped, else how are they to go on their wedding trip. When they return from that trip, the successful fertilization will be apparent to the observing person. Then their wings may be safely cut.

4. Will Mr. Shuck please answer this and the two following questions, as the method there described is his own?

Mustard as a Honey-Plant.—W. H. Prior, of Madison, Ga., on June 9, 1888, asks the following questions:

I have just started in bee-keeping. I have one colony of Italians, and would like to ask a few questions; will you please to answer them in the AMERICAN BEE JOURNAL:

1. I have an artificial grove. Would it be best to put the hives in the shade, or out in the open ground?

2. How high from the ground should they be?

3. Will they get the honey from white clover if it is with timothy grass, or would it be better alone?

4. Is buckwheat honey as good as any other?

1. A little shade would do, but it would be better out in the open ground than in too much shade.

2. There should be but little space under the hives, if any. It is so difficult for bees loaded with honey having pitched, to rise again and get into the hive, or up on the alighting-board.

3. Yes. The timothy will not be any disadvantage.

4. No; it is of the poorest quality—dark, and not fit for modern table use.

Painting Hives—When to Clip Queens' Wings, etc.—Mrs. Mary Blachly, of Delta, Colo., on June 1, 1888, requests answers to these questions:

I should like very much to ask some questions which I have been unable to get answered, and I thought as a last resort that the BEE JOURNAL would not fail to do so, as it can answer anything asked in regard to bees, I believe: 1. Should hives be painted different colors? My hives are all white. I lost a queen, having gone into the hive next to it, and the bees carried it out a few hours after, dead. 2. What colors are best? 3. Should virgin queens' wings be clipped? and how can one know when to clip the same? 4. In S. A. Shuck's article, on "How to Rear Good Queens," on page 344, he speaks of opening sealed larvae, and

Botanical.—Wm. G. Cory, of Carson, Ind., on June 4, 1888, writes as follows:

I send herewith for name, a sample of a plant that grows on low, wet lands, about 2 feet high, and in many places the ground is white with it. Bees are swarming on it from morning until night. No one here knows the name of it. Bees are doing well so far, but the prospect is very poor for a crop of honey, as the white clover as well as all other clovers was killed last winter.

This is *Phacelia purshii*, a noted honey plant belonging to the water-leaf family. *Phacelia* is the common as well as the scientific name.

To Prevent Bees Robbing one another's hives, contract the entrance to the smallest space possible, as it compels the robbers to pass in singly, thus enabling the bees inside to repel them.

QUERIES & REPLIES.

Excessive Swarming.

Written for the American Bee Journal

Query 552.—How can excessive swarming be checked or controlled?—Maine.

By using large, roomy brood-combs and hives.—J. M. HAMBAUGH.

By giving plenty of room, usually, but not always.—A. B. MASON.

Kill the queen, or get Mrs. Cotton's controllable (?) hive.—MRS. L. HARRISON.

A good honey harvest will usually do it. Aside from this I do no know.—G. M. DOOLITTLE.

It depends upon circumstances and location. Give plenty of room, and use young queens.—H. D. CUTTING.

By the use of the extractor. By proper manipulation where comb honey is produced it can be lessened.—A. J. COOK.

Destroy all the queen-cells in the old hive, and return the second swarm.—C. H. DIBBERN.

An answer to this query would require more space than this department allots. It can be checked by the extractor, removing frames of brood, cutting out queen-cells, etc.—J. P. H. BROWN.

Give plenty of room to store honey and for breeding, and plenty of ventilation at the top of the hive as well as at the bottom. I know whereof I affirm.—M. MAHIN.

If you mean first swarms, it is a pretty hard matter, in spite of all theories set forth. If after-swarms, destroy all queen-cells except one.—P. L. VIALLON.

By extracting the honey from the brood-chamber, and usually by cutting out all queen-cells but one, on the seventh day after a prime swarm has issued.—G. L. TINKER.

I suppose one swarm from each colony would not be called excessive. Further swarming can be prevented by hiving the swarm in a new hive on the old stand, removing the old hive, and cutting out all queen-cells but one good one, five or six days later.—R. L. TAYLOR.

If you mean to prevent the desire to swarm, keep all the honey extracted. I do not believe any one knows how to do it profitably, when working for comb honey.—C. C. MILLER.

This question is one of those that relates so much to localities that a general answer can be of no value. A special answer, to be of value, would

require more space than can be given here.—J. E. POND.

Get the back numbers of the BEE JOURNAL, and read the long essays on the subject. This question requires too much space for an answer, to be adapted to the Query Department.—JAMES HEDDON.

You may check it by giving the bees plenty of room before the swarming fever takes the bees, and continue to give them plenty of room by the tiering-up system, until the swarming season is past. But you cannot usually hope to control swarming.—G. W. DEMAREE.

1. By giving ample space for comb building early enough in the season to retard the desire to swarm. 2. After the first swarm issues, so manage that there will be no after-swarms, by getting all your working force in the new hive, and give them so much to do that they will not have time to swarm again.—EUGENE SECOR.

Establish early in the season the storing habit, and when once established, keep it encouraged by frequent inversions, and giving plenty of storage room at all times. There is something about this that an expert can do, but which it is difficult to communicate. Large hives do not do it, although they assist. Particularly empty brood-nests do not accomplish it, but they also assist. Good management does it every year, but that would require another book, and I have neither the time nor ability to write it.—J. M. SHUCK.

This question cannot be satisfactorily answered. Swarming can usually be checked by giving room, or extracting the honey, but as a rule it cannot easily be controlled.—THE EDITOR.

Bee-Spaces and Honey-Gathering by Divided Colonies.

Written for the American Bee Journal

Query 553.—1. Is a bee-space in the centre of a horizontally-divided brood-chamber a disadvantage? 2. Will a very strong colony in a large hive store as much comb honey as the same number of bees divided into 2 colonies in hives proportioned to their size, other conditions being the same?—Indiana.

1. No. 2. I think so.—A. J. COOK.

1. I suppose it is. 2. I think so.—C. C. MILLER.

1. I do not know. 2. They will, and more.—MRS. L. HARRISON.

1. It would be for me. 2. Yes.—H. D. CUTTING.

1. Yes. 2. Not if the two are crowded for room in the brood-chamber.—A. B. MASON.

1. I think so. 2. Yes, more.—J. M. HAMBAUGH.

1. I think not. It has some marked advantages. 2. Not only as much, but more.—M. MAHIN.

1. I do not know. 2. With me a strong colony will store more.—P. L. VIALLON.

1. I do not know that it is. 2. I think they would.—EUGENE SECOR.

1. I should say it was. 2. The strong colony if in not too large a hive.—J. P. H. BROWN.

1. Yes, most emphatically. 2. Far more, in my own experience, and I have tested the matter to quite a considerable extent.—J. E. POND.

1. Yes. The bees try to fill it up. 2. It depends on the prolificness of the queens, race of bees, and condition in the spring, etc.—DADANT & SON.

1. Certainly not. Why do our bees breed so fast and winter so well in box-hives full of cross-sticks and bee-spaces until the combs are all in pieces? 2. No, not if the hive is very large. There are extremes both ways.—JAMES HEDDON.

1. I think not materially. 2. I want the large colony every time, but do not want frames too deep. Still, this question will bear investigating. I like big colonies in medium-sized hives.—C. H. DIBBERN.

1. I have never found it to be a disadvantage, but often an advantage. 2. Sometimes as much, sometimes more, and sometimes less, depending on what the other conditions are. For instance, if the season passed with a short, heavy flow, the strong colony would store much more than the others, while if the season were much extended the others might store the more.—R. L. TAYLOR.

1. Reason would say that it would be better for bees to "brood" cells of eggs, larva and nymphs, to empty space and sticks of wood. What say you? Will a hen hatch chickens out of wooden eggs or empty space, if in the nest with her eggs? and had she not better sit on hens' eggs than on either of the other, for the good of her owner? What will hold good with the hen holds equally good with the bees. 2. I should prefer the large colony in a small brood-chamber during the honey harvest.—G. M. DOOLITTLE.

1. I think that it is, and my observations again this spring confirm my previously recorded views. 2. Strong colonies, other conditions being the same, always store the most honey, either comb or extracted, but if such colonies swarm, and the season of surplus is protracted, they will store more than those that do not swarm.—G. L. TINKER.

1. It is not a disadvantage to the bees, but is a nuisance to the bee-

keeper. The bees soon modify such a space by filling it to suit themselves. If it is to remain thus filled, and not broken, it is not needed. If it must be broken apart, it will be found not only useless, but an obstacle. I have been trying them thus for ten years, and I know. 2. Sometimes they will, and sometimes they won't. Rules cannot be applied to bees.—J. M. SHUCK.

I have used shallow cases tiered one on the other for brood-rearing, as an experiment for a number of years, and the plan has too many defects to be pointed out in this limited space. As to the bee-space between the shallow brood-chambers, the bees in course of time will attend to that by filling it with bits of comb, and they will economize space by hanging queen-cells into it like a row of teats on the nether side of an old suckling sow. Allow me to ask you, if the hive you speak of is "a horizontally-divided brood-chamber," how about it when it is not divided? 2. Yes, and more.—G. W. DEMAREE.

1. No. 2. Probably they would.—THE EDITOR.

CORRESPONDENCE.

COMB SURFACE.

Calculating Hive Capacity, the Number of Cells, etc.

*Written for the American Bee Journal
BY JOHN H. WIEDMAN.*

I am not in the habit of contributing anything to the bee-literature of our country, but I cannot refrain from sending you this to correct an error which nine-tenths of the bee-keepers make in the bee-periodicals in speaking of the comb surface which a beehive may contain.

On page 364 of the current volume of the BEE JOURNAL, Mr. Jas. McNeill has come to the conclusion that a brood-frame of $10\frac{1}{4} \times 10\frac{1}{4}$ inches, inside measure (the size Mr. Doolittle uses), contains 115 square inches of comb surface, and that it would, therefore, take eleven of these frames to enable the queen to lay 3,000 eggs a day during the breeding season, without leaving any room for pollen or honey.

Now, as Mr. Doolittle only uses nine of these frames in his brood-chamber, and finds that these give his queen a capacity for 3,000 a day, besides room for pollen and honey, it seems strange that it should not have occurred to Mr. McNeill that each of these frames presents a comb surface of 230 square

inches, 115 square inches on each side, and nine combs would contain 2,070 square inches, or 103,500 cells, or 40,500 more cells than would be necessary to furnish 3,000 cells for the queen a day.

On page 327, in his article, Mr. Doolittle reckons on the same basis, giving credit for only one-half the comb surface his hive contains.

It must be a well-known fact that nearly all our writers in the bee-papers use this same method. It seems to have become a custom among bee-men to employ this method, but I think that they should use the proper basis, as this is not correct, and as I see it, cannot be defended on any grounds whatever.

It seems strange how this method should have come into vogue, of measuring only one side of a frame in calculating the number of square inches of comb surface it may contain.

Riverside, N. J.

INCREASE.

How to Prevent it, when it is Not Desired.

*Written for the Canadian Bee Journal
BY D. A. JONES.*

This is the subject that is attracting considerable attention, and all information is being eagerly sought after. There are a great many bee-keepers who have all the increase they require, and would prefer a larger crop of honey with less increase. At seasons of the year when the weather is suitable, with a moderate flow of honey, more especially if the honey is thin that is being gathered, and about enough to stimulate breeding and swarming, bees sometimes get the swarming fever, and swarm they will, after they get thoroughly started, apparently in spite of all efforts to prevent them.

There are various methods practiced by different bee-keepers, all with more or less success according to locality, season, etc. Yet, what does in one locality is often the reverse of the practice most desirable in another. This makes all the difference, or frequently much of it, with the various managements of different bee-keepers; for instance, a bee-keeper in the southern or middle States, or southern Canada, might give special instructions for a certain kind of management which would prevent increase in his locality, while further south or further north this would not be suitable; another point is the variation in the honey season. Some have one continuous flow, while others have several flows of longer or shorter duration.

Some have a long dry space in mid-summer, and no honey then to be gathered, while others at the same time are reaping a rich harvest in comb and extracted honey.

Therefore, if we told those to extract the honey from their colonies, or remove the sections at that particular time when their bees were starving for the want of stores, such instructions would appear ridiculous to those living in a locality where no honey was coming in, and vice versa; therefore, judgment must be exercised in all matters of this kind, and all things being satisfactory, the season, flora, weather, and everything that tends to affect the management in any way should be carefully taken into consideration.

We shall speak of our own locality, and while speaking of one of our methods of preventing increase, we are not sure that we will not have a better one before the season closes, as this is a subject we have been experimenting on considerably for years.

Last year we gave it a very thorough test, and we are satisfied on one point, and that is, in order to keep down increase, it is absolutely necessary to give the bees room from time to time; that the colony may not be overcrowded, they must have all the space that they can possibly occupy; that the queen should be kept in the small brood-chamber; that perforated metal should be used to prevent her from occupying any more room than you desire she should (that is, as soon as the honey harvest commences she should have less room to occupy for egg-laying than she had previously). This curtailing of the laying of the queen assists in keeping down the swarming fever.

Where section honey is taken in the earlier part of the season, the supers should be raised as fast as they are occupied, and others placed under them until there are as many supers as it is possible for the bees to occupy. About once a week it is well to look over those which you suspect are liable to commence queen-cells and prepare for swarming, and remove any such cells, giving them a little more room by putting on a super. This will assist in keeping down the swarming fever.

If extracted honey is being taken there may be from two to six supers with combs placed on, according to the strength of the colony, but those should not always be placed on at once. According as a colony increases, a super may be added, in from three to six days, and in each case by raising the one next to the brood-chamber. Putting on the one with combs or frames filled with foundation next to the brood-chamber causes them to

commence work in it sooner. In this way very large crops of extracted honey may be taken, but the hives should be kept cool.

We do not care to set ours more than 4 inches from the ground. The honey should be extracted as fast as ripened, and if the swarm issues it may be returned, two or three of the brood-combs taken out of the brood-chamber and put up in one of the upper hives where the brood will hatch. By putting two or three empty combs in their place, thus giving the colony more room, will usually cause them to remain. We had many colonies last year occupying over 10,000 cubic inches of room.

After the honey season began to close, and there was very little honey coming in, we tried an experiment to see if it would give them the swarming fever, or if they would build queen-cells—by taking off the top supers and crowding them down. This proved just what we anticipated. In taking off the supers where comb honey was being gathered, and any signs of queen-cells appeared, removing one or two supers, and crowding the bees down, caused them to start queen-cells at once. In one instance, by removing all the supers containing sections, and crowding them down, we thought they were nicely settled in the hive, but the next day they made preparations to swarm; in fact, one of these immense colonies we found was just the place to rear a lot of good queens. One occupying say 10,000 cubic inches crowded down to 5,000 would build a large number of fine queen-cells, and we were able to create the swarming impulse, when such did not exist previously to the crowding.

We once were acquainted with a party who prepared a special place for bees in a building. Each place was about 3 feet square, or over 40,000 cubic inches. Although he had a number of these places all along the side of a building, and each one contained bees, and were very strong, each working out on a spout of their own, they were so arranged that the rays of the sun did not strike on them. The hives always kept moderately cool in summer, and fairly warm in winter. Some of these apartments were filled with comb and honey, others were not filled at all, but there was no swarming for years. If our memory serves us rightly, we think there never was more than about one swarm issued, unless some did so unknown to the owner; but we scarcely think that would be likely.

We have known other instances where the apartments were not quite so large, and the bees swarmed after filling them. Now the points seem to

us to be, giving them room at the proper time, not allowing them to become overcrowded, but only continuing to keep them in a prosperous condition, adding room in proportion to the strength and increase of the colony. Better give them too much room in the honey season than too little when the surplus has to be taken by the extractor.

Another point is, if the supers are allowed to become capped over, or nearly so, before the honey is extracted, they are also liable to swarm, but as soon as one is capped, it may be extracted and set away and another put in its place. Some might argue that this required a large stock of combs, but these combs are a good investment, and at any time when desired, they can be used for increase.

Just here comes a point that has something to do in the matter. After the queen is being crowded up and given less room for egg-laying, the increase enables every worker to do its best towards gathering the crop. Now this excessive work wears out the lives of the old bees much faster, and they die much sooner than they would if they had their hives filled with honey, and had only to lay out on the hive to rest themselves.

Thus it will be seen that the breeding space is only large enough to keep up with the mortality of the hive, and the rapid increase in the colony does not appear on account of the extra comb given them. Then in a short time the mortality becomes as great or greater than the increase, and this, we think, is a point that has much to do with keeping down the swarming fever.

Should the honey crop be an average one, at the end of the season the colony is not as strong in bees as they were at the commencement. This system of keeping down the production of bees, and of having a large number of young bees hatching after the honey harvest is over, is one that should be practiced at least in this section, as it saves a large amount of honey that would otherwise be consumed in brood-rearing, which, as we have said heretofore, is quite unprofitable at this particular season.

LEGISLATION.

The Survival of the Fittest, the Right to the Soil, etc.

*Written for the American Bee Journal
BY WM. J. WILLER.*

Mr. Camm as witness (not supreme judge) for the defense of the present way (not system) of gathering nectar, gives his evidence on page 346.

Some claim that it would be a monopoly. If it is a monopoly to have partial control of a part of this country, then I am a monopolist, for I have partial control of a farm, the United States of America being the other party.

Others say, leave it to the survival of the fittest—fittest what? I think that Mr. Camm gives us a good idea of what is really meant, when he mentions leaving it to the winter to kill off those not able to stand the drouth, or in other words, "the survival of the fittest." I do not think that the present way shows who is the fittest.

We will suppose that Mr. Heddon (and no one doubts but what he has ability) owned only 100 colonies of bees, money enough to run him one year, and pasture enough within reach to pay him for handling the bees.

Now there may happen to be a few farmers and men in other occupations who conclude to dabble in honey. They own in all 200 colonies in log-hives. Flowers, by their gay attire, advertise for workers; their motto being, "First come, first served," whether from the Heddon hive or log-gum.

Mr. Heddon secures only one-third of the nectar, it being barely enough to keep the bees. He sells out and leaves it to the survival of the fittest. But a doctor, lawyer, any other professional, or tradesman (we farmers are protected) would not need protection, for his employers would have it in their power to withhold the work from others if he was the fittest man.

If A was a doctor of ability, with a good practice (bees in Heddon hives), and B a quack doctor (bees in log-gums) who undertook to run A out, A's patients would say, A is a better workman than you, and he is the man that will do the work (fertilizing).

If a man succeeds in bee-keeping, he must have ability, but a man with more bees than brains, may succeed in crowding a fitter man out, and be no better off himself. If the legislature had left this country undivided until plants had stopped wandering in search of plant food, it would have been undivided yet; but being divided we may have our farm all into elm trees (I know they will go 4 rods each way, and I think they will go further for food), and still our next neighbor has some chance to succeed. But where would he be if all the plant-food were free to all, and he sowed wheat on a piece of land to gather the nourishment, and some one else sowed oats on the same land, and so on *ad infinitum*?

This may be a crooked evidence, but I have not been positive where I could prove nothing.

Sandusky, Mich.

STEALING HONEY.

A Grizzly Bear Caught in the Act.

Written for the Youth's Companion

BY A. WRIGHT.

The Holden brothers, Roswell and Frank, went to California from a New England town in 1881, for the benefit of Roswell's health, upon medical advice; and subsequently they found themselves engaged in the business of bee-keeping near Los Angeles — for circumstances, accident rather than design, first led them into it.

The children had inherited a constitutional tendency to pulmonary diseases, which had already begun to develop itself in Roswell. Indeed, he had become so far an invalid that his friends deemed it unsafe for him to set off on so long a journey alone. After many family deliberations it was arranged that Frank, and Ellen, their sister, should accompany him, and remain one winter, if not longer, in the West.

As their means were limited, Frank and Ellen began, soon after arriving in California, to look about for some way to earn a living. Roswell, too, as his health improved, wished for something to do; and at length they were, by chance, led to buy 13 colonies of bees of a lady—herself formerly an invalid—who had employed her leisure in apiculture, but now was about returning to her home in New York.

With these 13 colonies the young Holdens entered upon the honey-producing business early in 1882. For a year they resided in the vicinity of Los Angeles, but finding that the bees, as the number of colonies increased, were unpopular among their neighbors, they were led to move from so thickly inhabited a district, and lived for a time near Majave.

Thence, however, early the following spring, they again moved to a tract of unoccupied country further back among the mountains, in a kind of long defile, or crooked valley, inclosed by a wooded range on either hand, but which, from the great abundance of wild flowers, affords good pasture for bees. Here they are at present dwelling.

The Holdens have now between 200 and 300 colonies, having made it a rule, so far, to keep all the swarms which come out, though a few have escaped. The care of these numerous colonies of bees occupies all their time and attention, and they hired two Indian girls to assist them to watch the numerous sub-apiaries which they have established in different parts of the valley, generally within a mile of each

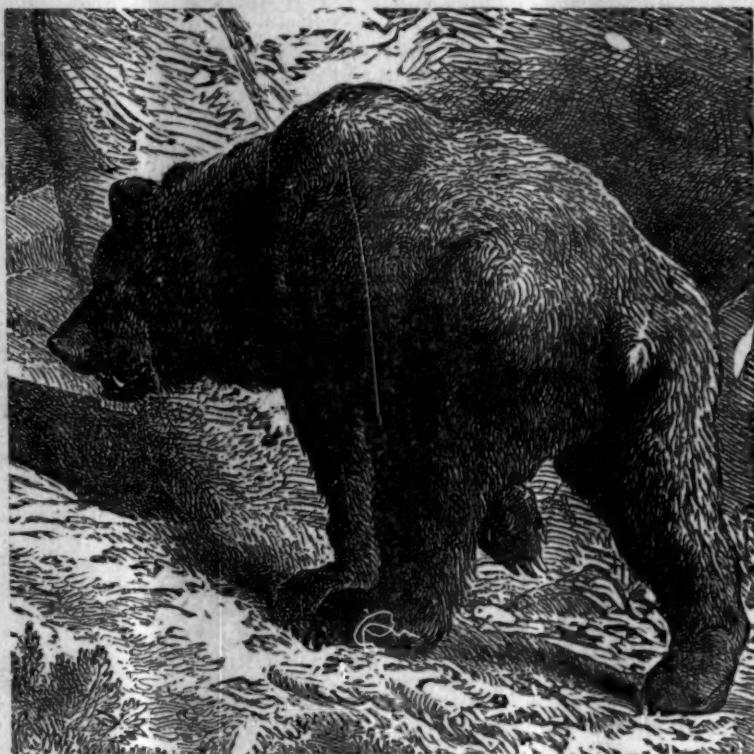
other. For it will not do to have all these 200 colonies, or more, collected near one spot, on account of the supply of flowers being over-fed, and the bees having to go too far.

The whole number of colonies is divided up into groups of 10 or 15 colonies, and these are often shifted from place to place as the season passes.

For moving colonies to fresh pasture, the boys have a platform set upon four wheels, and drawn by two steady mules. Then, after the bees have entered the hive at night, they are closed in, and the hives are transferred to the platform. Very carefully then, and slowly, so as not to jar the hives too much, the transportation of the colonies to the distance of a mile or two is effected.

valley, well stocked with flowers and flowering shrubs, outspread before them; and so secluded did the place seem, that the young apiarists judged it entirely safe to leave the bees to gather honey here, unguarded, for a few days at least.

Having seen to it, therefore, that the hives were well placed, they returned down the valley to their shanty-house, where their sister and the Indian girls looked after the few simple domestic affairs of the household. In fact, it was their custom thus to colonize a new pasture, and they had met with few losses. Honey in small quantity had been stolen from them on one or two occasions, and once a number of deers, in their flight across the valley, had upset three or four hives.



The Grizzly Honey-Eater of California.

In March or April of last year the Holdens had pastured out 10 colonies at a point higher up the valley than any they had previously occupied. In point of fact, the new pasture was in a branch of the main valley. Hither they had come up from their bee-sheds next below, two miles distant, with a load of hives, and built a "rest" for them near two large oaks—great trees with wide-spreading branches that nearly touched the ground—on the north side of the interval, at the foot of the mountain.

It was a favorable location, for on the south side the bees had the entire

But on this occasion they met with a mishap; for on going to the place two or three days afterward, to see how their swarthy "Italians" were prospering, Frank found one hive upset, and another of the ten missing altogether. From the latter circumstance, as also from certain marks and traces in the grass, resembling footprints, he at once concluded that some thief had "jumped" the hive—that is stolen it bodily.

A few days before they had heard the report of a gun several times, faint and at a distance, and had conjectured that there was a hunting party, either

of whites or Indians, on the other side of the mountain.

"Some of them have probably been spying about and got their eyes on that row of hives," was Frank's thought.

Whether the rogues would rest content with the honey of one hive, or come back after more, was what no one could guess. The brother, however, deemed it prudent to expect them again, and would have gone up and drawn the remaining hives down to camp, if the two Indian girls had not been sent down to the post-office—a little settlement twelve miles away—with the mules, to get the mail and a stock of groceries.

Roswell, therefore, proposed that, after supper, they should take a little shelter tent which they had, and go up to the new rest, in order to pass the night where they could guard the hives. For by this time the older brother had so far recovered his health as to be the stronger of the two.

As Ellen did not like to be left entirely alone, she proposed to accompany them. They accordingly set off, taking along the tent, three blankets, and a Winchester carbine.

Arriving at the rest just at dusk, they pitched their little shelter tent near the trunk of one of the oaks already referred to, and in such a manner that the ends of the drooping branches nearly or quite concealed the tent from view.

The night was warm, and the place was quite dry. Accordingly they did not kindle a fire, but made themselves comfortable with their blankets under cover of the tent, and the sheltering foliage of the tree.

They had really no serious expectation that the thief would come back; and after a time all three of them fell asleep, for Ellen Holden had become quite accustomed to this free, out-door life. They slept thus for three or four hours.

During the early part of the night there was a moon, but the moon set about midnight; the stars, however, gave some light, though everything was rather misty and dim. The now somnolent and quiet hives reposed on their rest, a few yards from the tree and the tent.

At length the sleepers were suddenly roused by a heavy thump, followed by a grating noise and a deep humming sound from the hives.

They all started up and listened intently.

"Something's afoul of the bees, Ros," whispered Frank.

Roswell, starting up, took the Winchester and peeped out amongst the oak branches. What looked like a tall, "slouching" man was in the very

act of taking one of the hives in his arms, despite the loudly buzzing bees. As Roswell stared in astonishment, the sturdy pilferer did actually clasp his arms about the hive, and raising it off the rest, started to walk slowly off with it.

"It's some Indian, I guess, by the looks of him," muttered Roswell. "I don't just like to fire at him; he don't seem to have any gun. But let's 'go' for him and give him a good thrashing."

Frank agreeing at once to his proposition, snatched up two stakes which they had cut for the tent, and handing one of these to his brother, who laid down the rifle, both young men ran quickly, but stealthily after the heavily-loaded thief, who was shambling awkwardly on across the open ground, beyond the rest.

The grass was thick and soft, and they were not long closing in with the marauder.

"You scoundrel!" yelled Frank. "Lug off our honey, will you?" and drawing off with his stake, gave the thief such a tremendous whack across the back and shoulders as to knock him half-forward over the hive.

"Take that!"

Drawing off again, he was about to repeat the dose, and Roswell on his part was just getting in a blow, when the supposed "Indian" suddenly came around on all fours, and gave vent to a growl which made the whole valley re-echo.

It was a grizzly! and as he growled, he rose on his hind legs and "lunged" at Frank.

Prodigiously astonished, Frank gave a long jump backward—not so far, however, but that one of the ugly creature's paw raked along his right side and sent him rolling over and over again on the ground.

Roswell, too, had executed an almost equally long leap backward, and ran plump into Miss Holden, who, with commendable foresight, had come quietly after her brothers, with the Winchester in her hands.

"Here, quick, shoot!" she exclaimed, thrusting the loaded piece into his hands. Turning on the instant, Roswell fired one, two, three, four shots into the bear, now in the very act of lunging again at Frank, and with such effect that the animal fell, roaring and whining, unable to rise for another lunge.

A few more shots finished it.

Frank, though considerably bruised and shaken up, was not seriously injured.

"Ellen," exclaimed Roswell, turning to his sister, when the bear had been fairly floored, and Frank had picked himself up, "Ellen, you're a brick!"

You got around just in the nick o' time!"

"Well," said she, laughing, "when two fellows go after a grizzly with a couple of sticks, it's a good plan to have a Winchester not far behind."

WINTERING BEES.

An Experiment of Wintering Bees Under a Straw-Stack.

*Written for the American Bee Journal
BY ANDREW UTZ.*

I have been thinking of wintering bees under a straw-stack, for years, so last fall I set up six posts 7 feet high, and made a space 8x14 feet covered with lumber. Then to make it perfect, I made a "flue" of lumber, 3x4 feet at the bottom, and 6x8 inches at the top. Then I set this "flue" above the posts which I thought would draw all the dampness out, and then built a narrow gangway to carry the bees in and out.

Then when I threshed I had five men on the stack to have it well packed; when the stack was finished it measured 28x50 feet, and 40 feet high. The narrow sides were 10 feet on each side, and the ends much thicker. They all thought that it would be just the thing to winter bees in.

On Dec. 20, 1887, I put 27 colonies in the stack; then I packed the gangway well with straw, and closed it with a tight door on the out-side.

On March 31 I took them out; 14 colonies were alive, and 13 were dead. But such hives and combs I never saw. My poor pets had a hard time; I suppose they had the diarrhea nearly all winter. It made me sick. The combs and hives were moldy and musty, so I put them in clean hives and fed them on syrup made from A sugar. They all had plenty of honey, but I did not think it was fit for them to eat. One lost its queen, so I put two together, and since then I have given each two frames of brood, and yet they are weak. Since then all but 9 have died.

I would not have written this, but I was at Columbus last winter on business at the time of the Bee-Keepers' Convention, but could only be at the convention one-half day, so I asked whether any one had ever wintered bees under straw, but no one had. Mr. Boardman said he would be afraid to try it. His head was level on that. Dr. A. B. Mason said I might do it and report.

By my doing so I hope that none of my brethren will be so cruel to their pets as I was. We cannot control the temperature under straw. After Mr.

Boardman nearly scared me, when I got home I got two thermometers, and let one down through the flue from the top of the stack among the hives to test the temperature. The other one was placed outside, in the open air, only covered to keep it dry. Now I will give the temperature as I took it day by day :

	UNDER THE STACK.	OUT-SIDE.
Feb. 26.	40.	30
" 27.	12.	12
" 28.	10.	11
Mar. 11.	38.	33
" 12.	31.	29
" 13.	12.	13
" 14.	43.	42
" 18.	33.	31
" 19.	29.	29
" 20.	60.	59
" 21.	40.	31
" 22.	19.	11
" 25.	22.	19
" 26.	61.	61
" 30.	39.	41
" 31.	60.	60

I left 38 colonies on the summer stands. Of these, 2 starved, but the rest are all in good condition, and have from 5 to 8 frames of brood. Of course I could not help taking from the rich and give to the poor pets that were under the straw-stack. We had plenty of fruit-bloom this spring, but on account of the cold weather, bees could not work on it more than about two days in all, but yet they are doing well.

Kenton, Ohio.

SMOKE.

Its Value in the Modern Management of Bees.

Written for the Bee-Keepers' Guide
BY T. F. BINGHAM.

When honey was at the highest price ever known in this country, viz., from 1863 to 1866, little use was made of smoke by the greater number of bee-keepers.

Even Roswell C. Otis, the veteran who mainly introduced the Langstroth hive in New York and the West, only used a cigar in his demonstrative work.

It is true that Mr. Langstroth had explained the action and value of smoke in the control of bees, and the principle on which its effect rested, in his most efficient work, "Langstroth on the Hive and Honey-Bee."

Hunters of bees had used burning straw about bee-trees when cutting them down, and found the cloud of smoke a protection against stings. But the main conception of the value of the smoke in the management of bees was associated with the common pipe or cigar. This fact, no doubt well based, came from the prompt action of tobacco smoke—an action more

efficient than any other smoke, and also more convenient with the means then in use, especially when the bee-keeper was a tobacco smoker. (And such habit was likely to prevail with bee-keepers whose aversions to the habit of smoking were not strong.)

The invention and application of the direct-draft principle in bee-smokers at once revolutionized the management of bees.

Tobacco smoke was no longer of value, because more condensed and in use by pipe and cigar smokers. The great abundance—a cloud of smoke enveloping the user of a Bingham smoker—and the fact that such a smoker never went out—and that smoke in clouds could be instantly applied to bees—at once supplanted the tobacco pipe and cigar in their management.

While it is not the province of this article to discuss the tobacco habit, the direct-draft smoker plays an important part; as there is no excuse for a bee-keeper smoking tobacco, so far as bee-keeping is concerned.

The fact that bees fill their honey-sacs with honey when frightened, and do not, when so filled, volunteer an attack, and the ease with which smoke is applied, has led, no doubt, to the abuse of smoke in managing bees.

Bad habits are common from superficial methods of reasoning, when a more thorough analysis of apparent results would eradicate or modify them. This is especially true in the use of smokers, and the smoker in the case of the apiary.

The fact that a cloud of smoke around a bee-tree reduces the anger of the bees, and removes the danger of attack from them, leads directly to the conclusion that such a cloud of smoke would have the same effect in an apiary. Circumstances which have come under my observation lead at once to this conclusion. As an evidence of the fact, allow me to cite the sale of smokers at certain seasons of the year, and the sizes most sold at such season.

The inference from the sale of any particular sizes of smokers, at a season when smokers are not much in use, is that the most experienced bee-keepers provide themselves with such tools as they are likely to need, before they are actually required for use in the apiary, while the amateur waits until the case becomes urgent before he decides, and then is likely to consult the first cost (which he sees clearly) rather than the results and principles underlying his purchase, which he does not so clearly understand.

Early in the spring, and also in the autumn, our sale of smokers are as five of the two largest to one of the

smaller sizes, while in the middle of the season, when the young bee-keeper is obtaining his urgent outfit, the small and medium sized smokers lead in sale the three largest sizes somewhat, so that the entire season wings around with about the same total number of each as sold.

As the larger sizes hold more wood, and make as much smoke in proportion, it is safe to infer that bee-keepers of experience do not object to an immense volume of smoke in handling bees.

This conclusion, providing the premises on which it is based are correct, leads to the decision that bee-keepers, whether they understand the principle or not, recognize the value of a continuous cloud of smoke in the apiary at all times when bee-keepers are of necessity or choice among the hives and bees.

It is idle to presume that a peaceful, non-aggressive apiary can be found where gloves and veils are resorted to instead of constant and overwhelming smoke.

With abundance of smoke, the eye of the bee-keeper holds the temper of the bees, as the experienced horseman holds the vicious horse, and any careful manipulation may be made without a puff of smoke, provided always that the smoke is abundant in the air, and at the service of the operator should occasion require.

The above leads directly to the much discussed fuel for smokers. Of course circumstances alter cases, and the means of obtaining fuel of any particular kind will play a conspicuous part. One thing, however, will be found advisable under all circumstances, viz., to consult the smoker.

It is useless to try to burn anthracite or hard coal in a box-stove designed for burning wood. It would be equally futile to attempt to burn stove wood in a smoker not having a strong continuous draft.

This being understood, a clear understanding of the principles leading to results desired, it seems to me but one conclusion can be reached, viz., that sound sun-dried, or other perfectly dried maple stove wood meets, in the highest degree, the needs of the bee-keeper using a direct-draft smoker.

Some of the reasons why perfectly dry hard wood is preferable for use, is that it burns only at the bottom or lower end. That is, it renders the direct-draft smoker a base burner. (Rotten wood burns all over, and is soon gone.) Wood in sticks does not obstruct either the draft or blast, both of which render quick and continued action easy.

Sound wood, which has live coals left after it has ceased to smoke, main-

tains sufficient heat to prevent unpleasant sooty accumulation, and furnishes hot, dry, strong smoke all the time without working the bellows, thus rendering it ready for use every instant.

Of course the direct-draft smoker will burn anything combustible, and he who uses it may choose his fuel according to circumstances and tastes.

It may be asked here if it would not be better to have cold smoke. Such an idea has been advanced very much, but as the object of smoke is to frighten bees, not convert them into bacon, anything that will accomplish the fright in the easiest and most effective manner, will serve the purpose best.

Hot air will do this just as well as smoke, as far as it goes, but the air cools so quickly it is of no value except just as it leaves the smoker. The making of smoke goes on fast or slow just in proportion to heat, so that when there is heat there is little smoke, and vice versa, where there is much smoke "there is some fire."

Abronia, Mich.

CONVENTION DIRECTORY.

1888. Time and Place of Meeting.

Aug. 3. Ionia County, at Ionia, Mich.

H. Smith, Sec., Ionia, Mich.

Aug. 14.—Colorado State, at Denver, Colo.

J. M. Clark, Sec., Denver, Colo.

Aug. 27.—Stark County, at Canton, O.

Mark Thomson, Sec., Canton, O.

Sept. 8.—Susquehanna County, at Montrose, Pa.

H. M. Seeley, Sec., Harford, Pa.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.



Three Weeks Late.—Wm. Enke, of Rochester, Minn., on June 9, 1888, writes:

The season here is about three weeks late. Dandelions are now in full bloom, and bees are gaining fast. My bees were in the cellar 103 days, and I lost 1 out of 90 (in the cellar), but these were reduced to 75 by uniting.

Spring Dwindling.—S. D. Haskin, of Waterville, Minn., on May 20, 1888, writes:

I will describe the condition of my bees and those of my neighbor: Mine were wintered on the summer stands, and his in an out-door cellar. About the middle of March it was warm, and I examined mine. They appeared to be in splendid condition, but they did not have a general flight until May 1, and as is usual with so hard a winter, and such a long confinement, they had soiled their hives badly, and many fainted and failed as they flew, and my 30 colonies are

now reduced to 6. The wild plums, cherry and willows, and many other wild flowers are open, that they usually work on, but they do not seem to work energetically. My neighbor's bees were inside over 6 months. There was no suitable weather to get them out. There has been so very much wet and cold weather. His bees are much reduced, but are in better condition than mine. I have taken 20 of his colonies to run on shares this season, giving him one dollar per swarm for the young swarms to hive in my hives, which are full of comb. I give him one-half of the honey of the old colonies, but the prospect so far is slim, indeed. To-day is warm and clear; the best we have had this spring.

Have Tested Them.—Daniel Whitmer, of South Bend, Ind., on May 16, 1888, writes:

Having used the Heddon divisible-brood-chamber hive for two years, I would say that I find it more convenient for handling than any hive I ever used. I can find queens very readily in it, and prefer it for the production of comb honey, as well as for getting it in the liquid form. For moving them in and out of the cellar I find them exceedingly convenient. Of course I shall test them more fully this year, if we have a good honey flow.

Moved my Bees.—W. H. Stringer, of Guthrie Center, Iowa, on June 1, 1888, writes:

I moved my bees this spring on a wagon about ten miles. I lost about 12 colonies through the winter. I had 3 colonies that I wintered out-of-doors; the rest were in the cellar. I have 36 colonies, including a few which I divided. I think that fully one-half of the bees in this county died last winter. I secured about 1,000 pounds of honey last year. I like the BEE JOURNAL very much.

That Three-Sided Hive.—Mr. D. Chalmers, of Poole, Ont., on June 2, 1888, asks us to make some corrections of his article on page 340. He says:

In giving a description of my improvements in bee-hives, there are a few mistakes which should be corrected: In the 19th line below Figure 1, it should read thus: "The upper level of the frames are that distance below the level of the top of the hive;" then, again, in claiming the properties of the honey-board, it should read: "Only being propolized around the inner edge of the hive," instead of under edge. There is a misprint in the first line of the second column, in that you have "adjustable" side instead of adjustable.

Still Feeding the Bees.—Mr. O. R. Goodno, of Carson City, Mich., on June 10, 1888, writes very discouragingly of the prospects—but he is yet hopeful:

Spring is not yet in sight for bees. Spring dwindling still continues. I am feeding the bees every night to keep them from starving. Fruit bloom and dandelions are past and gone, with the above existing conditions. I would like to see Mr. Doolittle, or any other man, produce his starters for surplus which he advocates in fruit bloom, in this section this year. I have seen the first raspberry and white clover bloom to-day, for the season. For several days nothing has been in bloom, with a fair prospect for a slight frost to-night, but never mind. "Wind her up again, John."

Bees Scarce Here.—A. S. Camblin, of Selma, Iowa, on June 18, 1888, writes:

There are no large apiaries in this part of the State, and it is likely that there will be but few small ones for some time to come. Owing to the two years' drought, the bees have nearly all died. There is not more than 25 colonies within four miles of this place, and 15 of them are what I saved out of upwards of 30 I put into the cellar last fall. I hope for a full honey flow. I put off feeding until late. The season here has been backward. During fruit bloom it was cold and windy most of the time, so that the bees could not fly; but by feeding I have my 15 colonies in pretty fair condition. I have nearly a clear field, and if the season is favorable, I expect to get some honey this summer. I have 7 or 8 acres of Alsike clover sowed this spring with fall wheat. Will it bloom this summer to afford any honey?

[Yes. It is an annual, and blooms the first year from the seed.—ED.]

But Little Surplus Honey.—C. Solveson, Nashotah, Wis., on June 14, 1888, writes:

In this vicinity we shall have but little if any surplus honey this year. Not only is the white clover badly killed out, but we will not have the bees to gather what little honey there will be. Out of 94 colonies placed in winter quarters last fall, I had 90 colonies left this spring in good condition; since then I have lost 30 per cent. from spring dwindling. No pollen was gathered in April, and but little in May. I have not a colony to-day that is stronger than when taken from the cellar on April 18, and I am feeding them daily to keep life in the few remnants I have left. The Editor's remarks in regard to that infamous Wiley, are to the point exactly. His position and present employment is a disgrace to the Nation!

Good Prospect for Honey.—J. M. McDaniel, of Peoria, Texas, on May 11, 1888, writes:

Our prospect for honey is good. Bees here have been near starvation for the last two years, but now the few that have survived are booming.

Successful Work.—A. S. Straw, of Edwardsburg, Mich., on June 14, 1888, says:

I have kept bees for 35 years of my life, and I thought I was well posted on them, but after reading the AMERICAN BEE JOURNAL, I find I am at the foot of the ladder. I can look back and see where I lost lots of bees by not reading and posting myself. I commenced two years ago with 3 colonies of bees, and got 300 pounds of comb honey. In 1887 I had 7 colonies; I got no surplus, but I increased them to 15. I commenced this spring with 15, all in good condition, and they are gathering honey fast now. They wintered in the cellar; the temperature was from 30° to 43° above zero. I give the AMERICAN BEE JOURNAL the credit for my success.

Has a Good Market.—J. M. Jacobs, DeWitt, Iowa, on June 14, 1888, writes:

I have, this spring, in good condition, 30 colonies of Italian bees. This year, in this region, prospects are good. The year 1887 was unfavorable for honey. I had orders for 10,000 pounds of honey more than I could fill. In 1886 I sold in 14 days 23,000 pounds of honey. I can sell this fall 100,000 pounds of one-pound sections of white clover honey.

Joined the Silent Majority.—Mr. H. Clark, of Palmyra, Iowa, on June 7, 1888, writes as follows:

The Lord has seen fit to call my daughter to the Land of Rest. She was an interesting worker among the bees. She had soft blue eyes and long yellow hair, and was a constant reader of the BEE JOURNAL, and spoke of it in her last hours. These lines were written by Mrs. Martha Thompson, of Clarkson, Iowa, concerning our daughter Emma:

She sleeps within the cold, cold ground,
The dark, blue skies above her;
She was too fair and frail for earth,
None knew her but to love her.

Her sweet, fair form has faded now,
Her cheeks have lost their roses;
Her guiltless heart is free from sin,
In heaven sweet repose.

We stood beside her bed of death,
Bowed down were we by sorrow;
We knew she would be lost to us,
Upon the coming morrow.

From her fair lips the cheerful smiles
Could not by death be driven.
And with hopes of future bliss,
She passed from earth to heaven.

Hold your Breath.—L. Hammer-schmidt, Amana, Iowa, writes on June 8, 1888, as follows:

In the *Scientific American* for June 2, 1888, I find this statement: "If you hold a bee by the legs, between two fingers, and let her sting act on the fleshy part of your finger's point, as long as you hold your breath, the sting will not penetrate the skin." I have tried this, and found it to be correct; even more, I have put my hand between two combs full of bees; have taken a hand-full of bees, and when I sweep off the bees from a comb, as long as I can hold my breath, they will not sting. Will some others of the fraternity try this and report?

[We republish the above letter, corrected because in our last issue the word *not* was introduced in the fourth line in the place of *act*—spoiling the sense.—ED.]

Frank Leslie's Sunday Magazine for July, which begins the twenty-fourth volume, is a bright and entertaining summer number, full, as usual, of interesting reading and beautiful illustrations. Among the profusely illustrated articles are "Ancient Greeks in Modern Cyprus," by A. L. Rawson; "Sunday in the City of the Czar," by Rev. Frederick Hastings. These with other numerous articles, art pictures, music and miscellany, make up a very attractive number.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

A Modern BEE-FARM, and its Economic Management; showing how bees may be cultivated as a means of livelihood; as a health-giving pursuit; and as a source of recreation to the busy man. By S. Simmins. For sale at this office. Price, \$1.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

If You Live near one post-office and get your mail at another, be sure to give the address that we have on our list.

Milton's new pamphlet on Comb Honey Production has been reduced in price to 5 cents. For sale at this office.

If you Lose Money by carelessly enclosing it in a letter, it is without excuse, when a Money Order, which is perfectly safe, costs but 5 cents.

Please to get your Neighbor, who keeps bees, to also take the AMERICAN BEE JOURNAL. It is now SO CHEAP that no one can afford to do without it.

Preserve Your Papers for future reference. If you have no BINDER we will mail you one for 60 cents; or you can have one FREE, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

Please write American Bee Journal on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Home Markets for honey can be made by judiciously distributing the pamphlets, "Honey as Food and Medicine." Such will create a demand in any locality at remunerative prices. See list on the second page of this paper.

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

For 50 colonies (120 pages) \$1.00
" 100 colonies (220 pages) 1.25
" 200 colonies (420 pages) 1.50

Photographs of Bee-Keepers.—The "medley" gotten up by E. O. Tuttle, containing the faces of 131 representative apiarists, and a printed sketch of each one, will be sent with the BEE JOURNAL for one year for \$1.75; or we will present it free, by mail, to any one, for a club of three subscribers and \$3.00.

CLUBBING LIST.

We Club the *American Bee Journal* for a year, with any of the following papers or books, at the prices quoted in the LAST column. The regular price of both is given in the first column. One year's subscription for the *American Bee Journal* must be sent with each order for another paper or book:

Price of both.	Club
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The American Bee Journal	1.00
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and Gleanings in Bee-Culture	2.00	1.75
Bee-Keepers' Magazine	1.50	1.40
Bee-Keepers' Guide	1.50	1.40
Bee-Keepers' Review	1.50	1.40
The Apiculturist	1.75	1.60
Canadian Bee Journal	2.00	1.80
Canadian Honey Producer	1.40	1.30

The 8 above-named papers	5.65	5.00
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and Cook's Manual	2.25	2.00
Bees and Honey (Newman)	2.00	1.75
Binder for Am. Bee Journal	1.60	1.50
Dzierzon's Bee-Book (cloth)	3.00	2.00
Root's A B C of Bee-Culture	2.25	2.10
Farmer's Account Book	4.00	2.20
Western World Guide	1.50	1.30
Heddon's book, "Success,"	1.50	1.40
A Year Among the Bees	1.75	1.60
Convention Hand-Book	1.50	1.30
Weekly Inter-Ocean	2.00	1.75
Iowa Homestead	2.00	1.90
How to Propagate Fruit	1.50	1.25
History of National Society	1.50	1.25

The Convention.—The pamphlet containing the report of the proceedings of the Union Convention in Chicago, is now published, and can be obtained at this office for 25 cents. Or bound up with the history of the International Society, and a full report of the Detroit and Indianapolis conventions, for 50 cents, postpaid.

Cork for Winter Packing.—Its advantages are that it never becomes musty, and it is odorless. Cushions can be made of cloth and filled with the cork, for winter packing. We can supply all orders now at 10 cents per pound. Or a seamless sack of it, containing 15 pounds, for \$1.00.

We Supply Chapman Honey-Plant SEED at the following prices: One ounce, 40 cents; 4 ounces, \$1; $\frac{1}{2}$ pound, \$1.75; 1 pound, \$3. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

Red Labels for Pails.—We have three sizes of these Labels ranging in size for pails to hold from one to ten pounds of honey. Price, \$1 for a hundred, with the name and address of the bee-keeper printed on them. Smaller quantities at one cent each; but we cannot print the name and address on less than 100. Larger quantities according to size, as follows:

	Size A.	Size B.	Size C.
250 Labels	\$1.50	\$2.00	\$2.25
500 Labels	2.00	3.00	3.50
1,000 Labels	3.00	4.00	5.00

Sample mailed free, upon application.

J. T. Wilson, of Nicholasville, Ky., on June 4, 1888, writes thus: "My card in the AMERICAN BEE JOURNAL brings most of my orders."

Honey and Beeswax Market.**NEW YORK.**

HONEY.—We quote: Fancy white in 1-lb. sections, 14@15c.; the same in 2-lbs., 10@11c.; buckwheat 1-lbs., 10c.; 2-lbs., 9c. Market dull. We are doing all we can to reduce stock, to make room for the new crop.

BEESWAX.—25c.

HILDRETH BROS.
May 21. 29 & 30 W. Broadway, near Duane St.

DETROIT.

HONEY.—Best white in 1-lb. sections, 14c.—Dull.
BEESWAX.—25@24c.
June 14. M. H. HUNT, Bell Branch, Mich.

CHICAGO.

HONEY.—Prices range from 15@16c. for best one-lb. sections; other grades are slow, at lower prices. Extracted, 7@8c. Light demand, and supply larger than usual at this season of the year.

BEESWAX.—29c.

R. A. BURNETT,
May 1. 161 South Water St.

NEW YORK.

HONEY.—We quote: Fancy white 1-lb. sections, 14@15c.; fancy 2-lbs., 12c. Lower grades 1@2c. per lb. less. Buckwheat 1-lbs., 10@10c.; 2-lbs., 9@9c. Extracted, white, 7@7c.; dark, 5@6c. Market is dull for comb but improving for extracted, of which new from the south is arriving.

BEESWAX.—Scarce, 24@27.

May 21. F. G. STROHMEYER & CO., 122 Water St.

CHICAGO.

HONEY.—We quote: Fancy white clover 1-lbs., 16@17c.; 2-lbs., 15@16c. Dark is slow sale at almost any price. Extracted is scarce, and sells at 7@10c.

BEESWAX.—25c.

Mar. 13. S. T. FISH & CO., 160 S. Water St.

CINCINNATI.

HONEY.—We quote extracted at 5@6c. per lb., for which demand is good. Comb honey, 14@17c.—Demand slow.

BEESWAX.—Demand is good—20@22c. per lb. for good choice yellow, on arrival.

Jnu. 14. C. F. MUTH & SON, Freeman & Central Av.

MILWAUKEE.

HONEY.—Choice white one-lb. sections, 16@17c.; 2-lbs., 15@16c.; 3-lbs., 14c. Extracted, white in kegs and $\frac{1}{2}$ -barrels, 8 to 9@10c.; in tin and pails, 9@10c.; dark in barrels and kegs, 5@7c. Market fair.

BEESWAX.—22@25c.

Apr. 23. A. V. BISHOP, 142 W. Water St.

DENVER.

HONEY.—Best white 1-lb. sections, 17@19c.; 2-lb. sections, 15@17c. Extracted, 7@10c.

BEESWAX.—20@23c.

Mar. 1. J. M. CLARK & CO., 1400 Fifteenth St.

KANSAS CITY.

HONEY.—We quote: Choice white 2-lb. sections, 17@18c.; dark 2-lbs., 14@15c.; choice white 1-lbs., 18 to 20 cts.; dark 1-lbs., 15@16c. White extracted, 7@8c.; dark, 5@6c. Demand is slow. White extracted is firm when in 50-lb. tin cans.

BEESWAX.—21 to 22c.

Mar. 20. HAMBLIN & BEARSS, 514 Walnut St.

BOSTON.

HONEY.—We quote: 1-lb. sections, 16@17c.; 2-lb. sections, 14@16c. Extracted, 8@9c. The market is not very brisk and sales are slow.

BEESWAX.—25 cts. per lb.

Mar. 24. BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—We quote for now extracted 9@10c., as to color and quality. New comb honey 14@15c., as to quality. Arrivals are still small, and demand of a jobbing nature.

BEESWAX.—Scarce, 20@24c.

June 2. SCHACHT & LEMCKE, 123-124 Davis St.

KANSAS CITY.

HONEY.—We quote: White 1-lbs., unglassed, 15c.; 1-lb., white, glassed, 14c.; dark, 1-lb., 20. less. Calisso, 2-lbs., comb, white, 13c. Extracted, 7c. Considerable old honey in this market. No new yet in. Sales are very slow.

BEESWAX.—None on the market.

June 9. CLEMONS, CLOON & CO., cor 4th & Walnut.

Paper Boxes—to hold a section of honey for retail dealers. We have two sizes on hand to carry sections 4 $\frac{1}{2}$ x1 $\frac{1}{2}$ and 5 $\frac{1}{2}$ x1 $\frac{1}{2}$. Price, \$1.00 per 100, or \$8.50 per 1,000.

New Subscribers can obtain the full numbers for 1887 and 1888, for \$1.75, while there are any sets of 1887 left.

Alfalfa Clover.—For habits and cultivation of this honey-plant, see page 245. We supply the seed at the following prices: —Per lb., 22c.; per peck, \$3.00; per half-bushel, \$5.50; per bushel of 60 lb., \$10.00. If wanted by mail, add 18 cents per pound for bag and postage.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

Advertisements.

LOOK!—Beautiful One-Piece Sections only \$3.80 per 1,000. Order at once from this advertisement—or if you wish T-Supers or other Supplied cheap, write for circular. Address, R. L. Clegg,
25A1t PEORIA, Union Co., OHIO.

Mention the American Bee Journal.

FOR SALE—600 Colonies in the movable-comb hives, at \$4.00 for Italians, and \$3.00 for Hybrids.

G. H. ADAMS, Troy, N. Y.

Mention the American Bee Journal.

FOR THIRTY DAYS

We will offer 1-Piece V-Groove Sections, mostly 4 $\frac{1}{2}$ x4 $\frac{1}{2}$ x1 $\frac{1}{2}$, at reduced prices.—We guarantee our Sections No. 1 in every respect; have 100,000 to select from. Please, friends, send for sample, to

J. B. MURRAY,
25A1t ADA, Hardin Co., OHIO.

Mention the American Bee Journal.

We are Going to Move

AND will sell cheap—new and second-hand Hives and Cases, a lot of Dadants' Foundation, Barnes' Saw, 10-Inch Pelham Foundation Mill, Novice Extractor, and Alley's Drone-Traps; Hives and Cases in the flat, etc.

J. W. BUCHANAN & BRO.,
25A1t ELDORA, Hardin Co., IOWA.

Mention the American Bee Journal.



VICTOR
SAFE.

DESIGNED for the Farmer, Lawyer, Doctor, Postmaster, Merchant, Township and County Officer, the Bee-Keeper, the Home—in fact every one should have a secure place for valuables.

We offer in the VICTOR SAFE a first-class Fire-proof, Burglar-proof, Combination Lock Safe, handsomely finished. Round corners, hand decorated; burnished portions are nickel-plated. Interiors nicely fitted with sub-treasures, book-spaces and pigeon-holes.

Prices range as follows:

OUTSIDE.	INSIDE.	WEIGHT.	PRICE
No. 2. 22x15x16.	12x8x8 $\frac{1}{2}$.	250 lbs.	\$30.00
No. 3. 28x18x18.	16x10x10.	600 "	40.00
No. 4. 32x22x22.	19x14x12 $\frac{1}{2}$	800 "	60.00

THOS. G. NEWMAN & SON,
923 & 925 W. Madison-St., CHICAGO, ILLS.

**GLASS PAILS
FOR HONEY.**

These Pails are made of the best quality of clear flint glass, with a ball and a metal top and cover. When filled with honey, the attractive appearance of these pails cannot be equalled by any other style of package. They can be used for household purposes by consumers, after the honey is removed, or they can be returned to and re-filled by the apiculturist.

Prices are as follows:
To hold 1 pound of honey, per dozen, \$1.60
" 2 pounds " " " 2.00
" 3 " " " 2.50
" 4 " " " 3.00

THOS. G. NEWMAN & SON,
923 & 925 W. Madison-St., CHICAGO, ILLS.

**THE OLD AND RELIABLE
KNICKERBOCKER BEE-FARM**

(ESTABLISHED 1860.)

It will PAY you to send for our Circular and Price List of Bees and Queens before ordering elsewhere. Address,

GEO. H. KNICKERBOCKER,
(Box 41) PINE PLAINS,
23D2t Duethers Co., N. Y.

Mention the American Bee Journal.

LOOK HERE!

FOR Sale Cheap—Bee-Hives, Shipping-Crates and Brood-Frames; Comb Foundation, Planer-Sawed V-Grooved Sections a specialty. Price-List free.

J. M. KINZIE & CO.,
13A1t Rochester, Oakland Co., Mich.

We will SELL CARNIOLAN QUEENS, reared in June, July and August, 1888, until further notice. Untested queens \$1.00; tested, \$2.00; tested and selected, \$3.00.

ANDREWS & LOCKHART,
PATTEEN'S MILLS, Wash. Co., N. Y.

NEW ONE-POUND HONEY PAIL.

THIS new size of our Tapering Honey Pails is of uniform design with the other sizes, having the top edge turned up, and has a ball handle, making it very convenient to carry. It is well-made and, when filled with honey, makes a novel and attractive small package, that can be sold for 20 cents or less. Many consumers will buy it in order to give the children a handsome toy pail. Price, 75 cents per dozen, or \$5.00 per 100.

THOS. G. NEWMAN & SON,
923 & 925 W. Madison-St., CHICAGO, ILLS.

SUPPLY DEALERS

AND OTHERS should write to me for SPECIAL PRICES on BEE-SUPPLIES for this fall and winter.

A heavy Discount allowed.
Address, A. F. STAUFFER,
44D1t STERLING, ILLINOIS.

We have some ELEGANT RIBBON BADGES, having a rosette and gold Bee, for bee-keepers' use at Fairs, Conventions, etc. Price 50 cents each, by mail, postpaid.

THOS. G. NEWMAN & SON,
923 & 925 West Madison-Street, CHICAGO, ILLS.

HOW TO RAISE COMB HONEY,

PAMPHLET full of new and improved methods; Price, 5 one-cent stamps. You need also my list of Italian Queens, Bees by the lb., and Supplies. OLIVER FOSTER,
13A1t Mt. Vernon, Linn Co., Iowa.

Mention the American Bee Journal.